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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,786

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Hiromasa Futamata

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07/26/2006

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EXAMINER

DUONG, DIEU HIEN

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/537,786

Applicant(s)

FUTAMATA, HIROMASA

Examiner

Dieu Hien T. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4,9-19 and 24-31 is/are rejected.
7) ☒ Claim(s) 5-8,20-23,32-33 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/537,786.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/06/05,09/02/05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because in Figure 4, both slip portion 6 and second antenna 9 are pointed to the same element. The slip portion 6 is not clearly showing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 26 recites the limitation "the base member" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent; except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoyama et al. (US 6,452,554 B1).

Regarding claim 1, Figure 12C of Aoyama shows an antenna comprising a thin plate-like base member 1 made of dielectric material; a ground conductor 22 formed of a thin-film shaped and rectangular conductor and disposed on the base member 1; a first antenna element 21b, 23 formed of a thin-film shaped and L-shaped conductor, having one end connected to one end of the ground

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conductor 22 and disposed on the base member 1; and a second antenna element 21a formed of a thin-film shaped and rectangular conductor and disposed on the base member 1 without being directly connected to the ground conductor 22 and the first antenna element 21b, 23.

Regarding claim 2, as applied to claim 1, Figure 12C of Aoyama shows that a first resonance being generated by electric current distributed on the first antenna element 21b, 23 and a second resonance is generated by electric current distributed on the second antenna element 21a.

6. Claims 16-19 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikegaya et al (US 2004/0008146 A1).

Regarding claim 16, Figure 36 of Ikegaya shows an antenna comprising a thin plate-like base member 15 made of dielectric material; a first antenna element 4, 3 formed of a thin-film shaped conductor and disposed on the base member 15 so as to form a slit portion opening at a part thereof; a second antenna element 6 formed of a thin-film and strip shaped conductor and disposed in the slit portion; and an impedance adjustment element 5 formed of a thin-film and strip shaped conductor and disposed between one side of the first antenna element and the second antenna element in the slit portion.

Regarding claim 17, as applied to claim 16, Figure 36 of Ikegaya shows that a first resonance is generated by electric current distributed on the first antenna element 4, 3, a second resonance is generated by electric current distributed on the second antenna element 6 and impedance is adjusted

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corresponding to a shape and arrangement location of the impedance adjustment element 5.

Regarding claim 18, as applied to claim 16, figure 36 of Ikegaya shows that the first antenna element 4, 3, the second antenna element 6 and the impedance adjustment element 5 are disposed on one surface of the base member.

Regarding claim 19, as applied to claim 18, Figure 36 of Ikegaya shows that the first antenna element 4, 3 comprises a first radiating portion 4 formed in a strip shape; a second radiating portion 3 formed in a strip shape and disposed in parallel to the first radiating portion; and an interconnecting portion having one end vertically connected to one end of the first radiating portion and the other end vertically connected to one end of the second radiating portion, the second antenna element 6 is disposed between the first radiating portion and the second radiating portion and in parallel to the first radiating portion, and the impedance adjustment element 5 disposed between the second radiating portion and the second antenna element and in parallel to the second radiating portion.

Regarding claim 31, Figure 36 of Ikegaya shows that an antenna comprising a thin plate-like base member 15 made of dielectric material; a first antenna element 4, 3 formed of a thin-film shaped conductor and disposed on the base member 15 so as to form a slit portion opening at a part thereof; and a

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second antenna element 6 formed of a thin-film and strip shaped conductor and disposed in the slit portion.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US 6,452,554 B1) in view of Tai et al (US 2004/0046697 A1).

Regarding claim 3, Aoyama discloses every feature of claimed invention except for the ground conductor; the first antenna element and the second antenna element being disposed on one surface of the base member. However, Figure 1 of Tai shows the first antenna element and the second antenna element being disposed on one surface of the base member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to dispose all Aoyama antenna elements in one plane as taught by Tai, doing so would occupy a relatively small space in an electric device (page 1, par. [0007]).

Regarding claim 4, as applied to claim 3, Figure 1 of Tai shows that a slit portion opening at a part thereof is formed on the base member 1 by combining

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the ground conductor 13 and the first antenna element 11 and the second antenna element 12 is disposed in the slit portion.

Regarding claim 9, as applied to claim 1, Tai (page 1, par. [0020]) discloses that the base member 1 has flexibility.

Regarding claim 10, as applied to claim 9, Tai page 1, (par. [0019], [0020]) discloses the ground conductor, the first antenna element and the second antenna element have flexibilities.

Claims 24-25 are rejected for similar subject matter to claims 9-10.

9. ~~Claim 11-12 is rejected under 35 U.S.C. 103(a) as being unpatentable~~
over Aoyama et al. (US 6,452,554 B1) and Tai et al. (US 2004/0046697), and further in view of Rutkowski et al. (US 6,124,831).

Regarding claim 11, Aoyama and Tai disclose every feature of claimed invention except for a support member made of non-conductor and fixedly securing the base member. However, Figure 6A of Rutkowski shows a support member made of non-conductor and fixedly securing the base member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Aoyama and Tai antenna with a support member made of non-conductor and fixedly securing the base member, as taught by Rutkowski, doing so would particularly well suited for operations within various communications system utilizing multiple, widely separated frequency bands (col. 3, lines 9-17).

Regarding claim 12, Aoyama and Tai disclose every feature of claimed invention except for a support member made of non-conductor and fixedly securing the base member. However, Figure 6A of Rutkowski shows a support member made of non-conductor and fixedly securing the base member. It would

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Regarding claim 12, Figure 6A of Rutkowski shows the support member comprises an upper end portion 56 extending to one direction; a lower end portion 52 disposed in parallel to the upper end portion; and an interconnecting portion 55 having one end vertically connected to one end of the upper end portion and the other end vertically connected to one end of the lower end portion.

Claims 26-27 are rejected for similar subject matter to claims 11-12.

10. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (US 6,452,554 B1) in view of Tsai (US 6,297,779 B1).

Regarding claim 13, Aoyama discloses every feature of claimed invention except for the base member being mounted on an LCD section of a notebook-sized PC. However, Figure 1 of Tsai shows the base member being mounted on an LCD section of a notebook-sized PC. It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount Aoyama antenna on an LCD section of a notebook-sized PC as taught by Tsai, doing so would made antenna effectively transmitting and receiving electrical signals.

Regarding claim 14, Figure 1 of Tsai shows that the base member is mounted on a corner area of a casing of a notebook-sized PC.

Claims 28-29 are rejected for similar subject matter to claims 13-14.

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US 6,452,554 B1) in view of Wong et al. (US 6,774,853, B2).

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Regarding claim 15, Aoyama discloses every feature of claimed invention except for the ground conductor, the first antenna element, and the second antenna element being formed on the base member by means of at least one of an etching technique and screen printing technique. However, Wong (page 2, lines 57-65) discloses the ground conductor, the first antenna element, and the second antenna element being formed on the base member by means of at least one of an etching technique and screen printing technique. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate Aoyama antenna with an etching technique as taught by Wong, doing so would contributing to the improvement of fabrication accuracy and low in manufacturing cost of the antenna (col.1, lines 26-30).

Claim 30 is rejected for similar subject matter to claim 15.

being formed on the base member by means of at least one of an etching technique and screen printing technique. However, Wong (page 2, lines 57-65) discloses the ground conductor, the first antenna element, and the second antenna element being formed on the base member by means of at least one of an etching technique and screen printing technique. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate Aoyama antenna with an etching technique as taught by Wong, doing so would contributing to the improvement of fabrication accuracy and low in manufacturing cost of the antenna (col.1, lines 26-30).

Allowable Subject Matter

12. Claims 5-8, 20-23, and 31-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, Figure 1 of Tai et al. (US 2004/0046697) shows that a first connecting portion formed on the first antenna element 11 in order to electrically connect the first antenna element to a first conductor of a cable 14;

Allowable Subject Matter

12. Claims 5-8, 20-23, and 31-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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and a second connecting portion formed on the ground conductor 15 in order to electrically connect the ground conductor to the second conductor 12 of the cable. Tai fails to teach a contact portion formed on the second antenna element in order to electrically connect the second antenna element to a second conductor of the cable via dielectric member.

Claims 6-8 would have been found allowable for being dependent on claim 5.

Regarding claim 20, Ikegaya et al. (US 2004/0008146 A1) shows that the first radiating portion 4 is longer than the second antenna element 6 and the second antenna element 6 is longer than the impedance adjustment element 5. Ikegaya fails to teach the second antenna element 6 is longer than the second radiating portion 3.

Regarding claim 21, Figure 19 of Ikegaya fails to show a first connecting portion formed on the second radiating portion in order to electrically connect the second radiating portion of the first antenna element to a first conductor of a cable; a first contact portion formed on the impedance adjustment element in order to contact the impedance adjustment element to the first conductor of the cable covered with a covering material; a second connecting portion formed on the second antenna element in order to electrically connect the second antenna element to a second conductor of the cable and a second contact portion formed on the first radiating portion in order to contact the first radiating portion of the

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first antenna element to the second conductor of the cable via a dielectric member.

Claims 22-23 would have been found allowable for being dependent on claim 21.

Regarding claim 32, Ikegaya fails to teach a first rear surface antenna element formed of a thin-film shaped conductor and disposed on the other surface of the base member so as to form a rear surface slit portion opening at a part thereof; and a second rear surface antenna element formed of a thin-film and strip shaped conductor, disposed in the rear surface slit portion and electrically connected to the second antenna element.

Claim 33 would have been found allowable for being dependent on claim 32.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

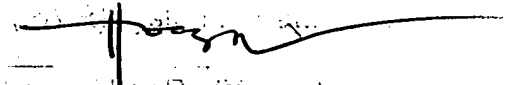
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Examiner

Dieu Hien Duong


HOANG V. NGUYEN
PRIMARY EXAMINER